

UMCSF 1.5 V1

SITE INSPECTION REPORT  
UNIVERSAL MANUFACTURING COMPANY  
WOODINVILLE, WASHINGTON

WAD044038073

Report Prepared By:  
Suzanne E. Milham  
Washington State Department of Ecology  
Preliminary Assessment/Site Inspection Program

April, 1986

USEPA SF



1486524

SITE NAME/LOCATION

Universal Manufacturing Company # WAD044038073  
144 NE 190th  
Woodinville, Washington 98072

Section 3, Township 26 North, Willamette Meridian.

Latitude: 47/45/18.0                      Longitude: 122/09/24.0

INVESTIGATION PARTICIPANTS

|                   |   |
|-------------------|---|
| Suzanne E. Milham | Washington State Department of Ecology<br>Hazardous Waste Cleanup Program<br>(206) 459-6319 |
|-------------------|---|

|                |   |
|----------------|---|
| Ned C. Therien | Washington State Department of Ecology<br>Hazardous Waste Cleanup Program<br>No longer with Ecology |
|----------------|---|

PRINCIPAL SITE CONTACT

Mr. Donald Jenkins  
14410 NE 190th Street  
Woodinville, WA 98072  
(206) 486-0791

DATE OF INSPECTION AND SAMPLING

October 23, 1985

## INTRODUCTION

Universal Manufacturing Company has been identified from Preliminary Assessment screening as requiring further investigations by the U.S. Environmental Protection Agency (EPA) Region X and the Washington State Department of Ecology (Ecology). This site was scheduled for a site inspection to gather additional information and accurately profile the nature and extent of past waste disposal activity. This site investigation was carried out under the Superfund Multi-Site Cooperative Agreement, Preliminary Assessment/Site Inspection (PA/SI) program. This report summarizes the results of this inspection.

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## 1.0 SITE OWNER/OPERATOR

Universal Manufacturing is owned and operated by Mr. Donald Jenkins.

## 2.0 SITE HISTORY AND BACKGROUND

Universal Manufacturing is an electroplater which produces printed circuit boards and sheet metal products. This facility has been in operation since 1968. Prior to 1975, all process waters, solvents and other liquid wastes were discharged through an unlined lagoon and a septic system. During that time period, there were chronic overflow problems of the septic system drainfield. Process waste water was discharged to the unlined lagoon for settling out of solids, the water then flowed into the septic system. This system used two tanks (these have been removed) which overflowed into a drainfield. This drainfield was saturated when in use and the waste water emerged in the parking lot and then flowed across the street towards Bear Creek. This overflow problem is believed to have continued for several years. The company, since 1975, has been hooked up to the METRO sewer system and has had chronic violations of their discharge permit for copper content. The old waste lagoon was subsequently filled in and paved over and is now located under the process buildings.

## 3.0 ENVIRONMENTAL SETTING

Universal Manufacturing is in a fairly rural area and is bound on the south side by 190 Street northeast and on the west by 144th Street. Bear Creek is 1/4 mile to the west. There are approximately 1866 people<sup>2</sup> within a 1 mile radius. There are 2 parks and 2 schools within one mile. There are two factory buildings containing offices and process equipment lines on site which are in a fenced area.

### 3.1 Climate

The mean annual precipitation for this area is approximately 45 inches.<sup>1</sup> The maximum 2-year, 24-hour rainfall is approximately 6 inches.<sup>1</sup> In July 1984, the daily maximum temperature was approximately 84°F<sup>1</sup> and in January 1984, the lowest average temperature was 16°F.<sup>1</sup>

### 3.2 Geology and Hydrology

There is a shallow aquifer at approximately 30 feet deep. Soils are glacial drift gravel with some lenses of till. The soils around this site are very permeable, allowing rapid infiltration of precipitation. There is standing and flowing water on-site during heavy rainfall periods.

### 3.3 Topography and Drainage

There are no storm sewers or drains serving the approximate 2 acre site. There is a palustrine emergent marsh and shrub/swamp wetlands 2/3 of a mile to the east of the site. Drainage flows from this direction into an unnamed tributary of Bear Creek which is 1/4 mile to the west. The site is on a slope which receives drainage water from upgradient wetland runoff.

### 3.4 Groundwater and Surface Water Uses

Drinking water in the area is drawn from groundwater. Well logs indicate wells to be in a shallow 30 - 50 foot deep aquifer. Within 3 miles there are 1,000 people served by domestic wells.<sup>2</sup> This facility receives its drinking water from the city supply system. The nearest well (Drenkel) is 3/4 of a mile north of the site. Bear Creek is 1/4 mile to the west of the site and is a salmonid spawning stream. Bear Creek is used for recreation but is not used for drinking water. There are 47 domestic wells, 1 industrial use and 2 municipal wells within 1 mile. Groundwater most likely flows in the direction of Bear Creek.

### 4.0 METHODS

The weather was overcast and approximately 50°F. There was a slight wind and no rain. The details of this site inspection and the present status of waste storage and handling practices are included in Appendix A - Milham memo to file.

At 10:30 a.m., we met at Universal Manufacturing with Don Chang and Bill Heaton of the King County Health Department. An interview with the site owner, Mr. Jenkins, was conducted and arrangements were made to collect a number of on-site soil samples. Sampling locations were chosen after a site tour and review of the process and storage areas (see Figure 1).

Soil Sample NCT055 was collected first at 12:50 p.m. This location is near 190th Avenue in front of the facility near a willow tree. This sample location was upgradient from the process area and was intended to represent background soil. The sample was taken at a depth of approximately 1-1/2 foot. The soil was dark black and loamy, with many 1-2 inch diameter smooth rocks interspersed.

Soil sample NCT056 was collected on the bank of the parking lot along 144th Avenue. This area may have received overflow from the septic drainfield and the old waste lagoon. Approximately 6" of ornamental bark covered a layer of plastic and the soil. The sample was taken from a depth of approximately 2 feet. The soil was similar in description to that at location NCT055.

Soil sample NCT057 was collected from behind the main building near the large metal storage tank in an unpaved area. This tank is used to store process wastes; it is unknown if it was filled or empty. The soils were extremely rocky and consisted almost exclusively of smoothed gravel, medium to large rocks and sand. The sample was collected at approximately 2 feet deep. There was a foul hydrogen disulfide smell present in this location, soil pH was measured and appeared normal. This location was chosen in the event that soil contamination from spills while filling this tank had occurred.

Soil sample NCT058 was collected between the two process buildings in a small unpaved area next to the circuit board shop and covered storage area. Split samples were collected from approximately 2-1/2 feet deep. The soil was comprised of wet gravel and sand. At 2-1/2 feet, there was a layer of reddish-orange material, possibly clay. This collection site was chosen because it was the closest unpaved area to the old waste lagoon.

At the end of the day, sample splits were tagged and signed over to the receptionist at Universal Manufacturing.

## 5.0 ANALYTICAL PARAMETERS

All samples were analyzed for volatile organics, purgeable chlorinated hydrocarbons, priority pollutant metals, and cyanide. A duplicate of sample NCT058 was taken for quality control and assurance purposes. Procedural transport blanks were maintained for all parameters sampled.

### 5.1 Quality Control/Quality Assurance of Sample Collection

Stringent quality control and assurance procedures for sample collection were developed in conjunction with the EPA Site Inspection Sampling Guidelines, and training course literature. These procedures are also discussed in detail in the sampling and safety plans which were developed for this site prior to performing the actual inspection (see Appendices D and E). Procedures for documentation, chain of custody, decontamination of samples and personnel, safety, and labeling are included in these plans.

Blind duplicates were made from one sample for each parameter analyzed. The laboratory was not notified which samples were the duplicates. Transfer and transport blanks were prepared by the laboratory and maintained and analyzed for each parameter sampled.

### 5.2 Laboratory and Data Quality Control/Quality Assurance

The laboratories which performed the sample analysis practiced strict quality control and assurance per EPA standards.

Lauck's Laboratory supplied a surrogate recovery report contained in Appendix A. Surrogate (chemically similar) compounds were utilized in the analysis of volatile organics. Surrogates were added to each sample prior to extraction and analysis to monitor for matrix effects, purging efficiency and sample processing errors. The control limits used by Lauck's represent the 95 percent confidence interval established by their laboratory through repetitive analysis of these sample types.

The Manchester Laboratory used similar quality control and assurance procedures.

All laboratory sample analyses results were reviewed for consistency and accuracy by each member of the PA/SI team and at least one organic chemist before inclusion to this report.

## 6.0 RESULTS AND DISCUSSION

Complete sample analysis results are contained in Appendix "A".

### Volatile Organics

Two of the soil samples analyzed for volatile organics showed contamination with trichloroethylene. Sample NCT 057 contained 150 ppb (ug/kg) and samples

NCT058 and 059 which were duplicates contained 340 and 330 ppb Trichloroethylene, respectively. Methylene chloride at 64 ppb and acetone at 61 ppb were present in sample NCT058. This contamination is believed to be from laboratory contamination since the duplicate sample (NCT057) didn't contain these same chemicals.

No other volatile organic compounds were identified in the samples.

#### Metals

When compared, the metals analysis values of background sample NCT055 were lower than those from sample NCT058 which had elevations of copper, lead, zinc, nickel, chromium and cadmium above the background soils at this site.

The amounts of metals available in the soil in Sample NCT058 were significantly lower than ten times primary drinking water regulations standards for maximum contaminants in soil. Because the levels of metals available in the soil are low, there is no apparent metals problem present.

#### Cyanide

The levels of cyanide detected in all the samples analyzed was greatly lower than the 200 ug/l standard set for drinking water by EPA under the ambient criteria. The highest amount detected was .5 mg/kg in sample NCT058 which was collected from between the process buildings. Cyanide at these levels does not represent a significant contamination problem.

### 7.0 CONCLUSIONS AND RECOMMENDATIONS

Sampling analysis documented that soils were contaminated with trichloroethylene in 2 locations; between and behind the process buildings. It is recommended that a complete RCRA inspection be performed to determine if present day operations are responsible for this soil contamination.

Further sampling of downgradient soils and groundwater should be performed to characterize the extent of the contamination present. Because of the permeable soils and shallow groundwater, there is an increased potential that contamination has spread farther than the site boundaries and possibly into the groundwater.

Because the poor chemical storage and handling practices seen on-site during this inspection, it is highly possible that the contamination detected in the surrounding soils is of a current, ongoing nature. Trichloroethylene was found in bulk feedstock form on-site (see Appendix A - Milham memo to file).

Heavy metals were not found to be excessive in the areas where the old waste lagoon and septic field would have leached to. The elevations of heavy metals between the process buildings could also be due to present day operations.

## 8.0 REFERENCES

1. Climatological Data Annual Summary, WA 1984, Vol. 88, #31 National Oceanic and Atmospheric Administration/
2. 1984 USEPA Preliminary Assessment Report on Universal Manufacturing.

9.0 FIGURES AND TABLES





9.0 FIGURES AND TABLES



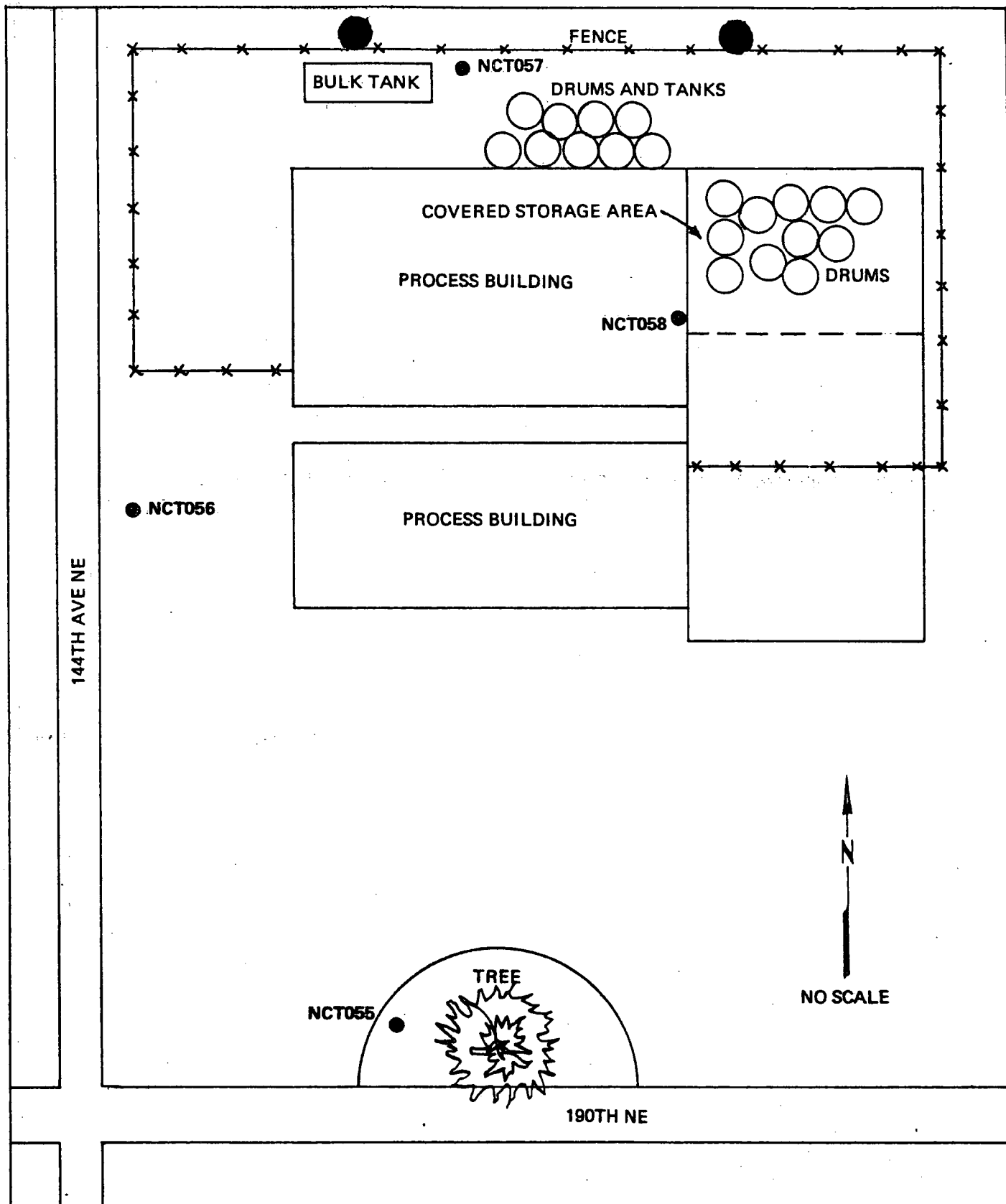
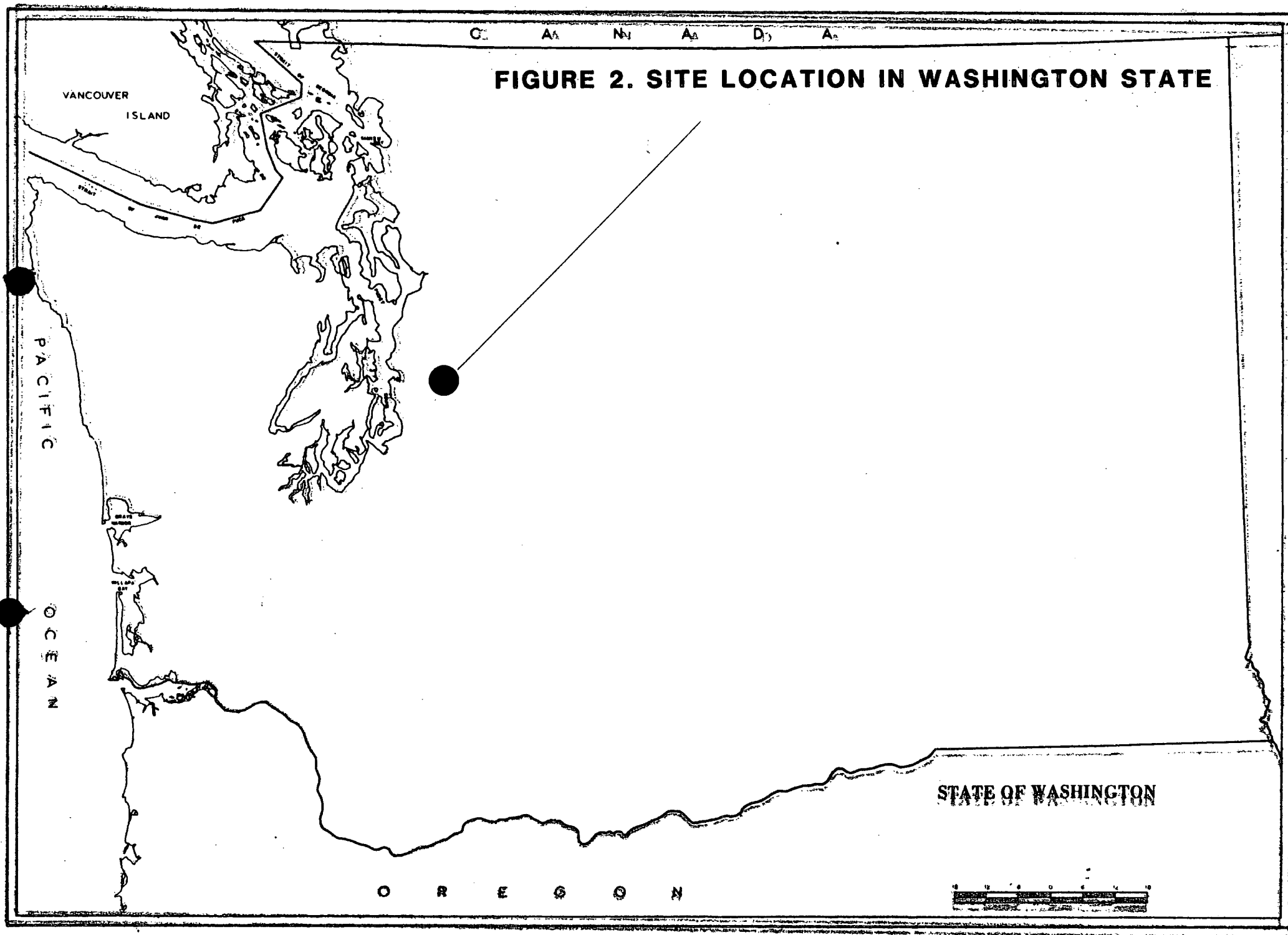


Figure 1. UNIVERSAL MANUFACTURING SITE SAMPLING LOCATIONS, WOODINVILLE, WASHINGTON, 10/23/85.

C A<sub>1</sub> N<sub>1</sub> A<sub>2</sub> D<sub>1</sub> A<sub>2</sub>

**FIGURE 2. SITE LOCATION IN WASHINGTON STATE**





APPENDIX A

Sample Analysis Results/Correspondence/Historical Documents

**From** Ned Therien  
Remedial Action Division  
Dept of Ecology  
Mail Stop PV-11  
Olympia, WA 98504-8711



**ECON-O-GRAM**

**To** Steve Messman  
NW Regional Office  
Dept. of Ecology  
4350 - 150th Avenue NE  
Redmond, WA 98052-5301

**Subject**

FILE #

Possible RCRA Storage Facility

Universal Manufacturing

14410 NE 190th St, Woodinville 98072

☐ PLEASE  
REPLY BY:

☒ NO REPLY  
REQUIRED

**Message**

On October 23, 1985, Suzanne Milham and I conducted a CERCLA site inspection of Universal Manufacturing in Woodinville. We interviewed Mr. Donald Jenkins, the operator, to determine past practices that might have released hazardous substances. A former evaporation pond for wastes from circuit board manufacturing was filled in and covered with a concrete-floored building. A formerly used septic tank which had received the same waste types as the pond was inaccessible. We collected four soil samples near the waste storage area at the back of the buildings and in the old drainfield area. A complete inspection report will be provided to you after sample analyses have

SIGNATURE

585-6352

DATE

10/24/85

**Reply**

been completed. During our inspection, I observed approximately 30 55-gallon drums which appeared to be filled. Some of those drums were marked as containing caustic hazardous waste. Mr. Jenkins said that a tank (approximately 1500 gallons) was filled and emptied about every four months with caustic waste. The waste

SIGNATURE

DATE

FORM S.F. 1 drums and tank were on an unbermed paved area.

ORIGINATOR: SEND WHITE AND YELLOW COPIES TO RECIPIENT

RECIPIENT: RETURN YELLOW COPY IF A REPLY IS NECESSARY

ORIGINATOR'S FOLLOW-UP COPY



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940 South Harney St., Seattle, Washington 98108 (206)767-5060

Chemistry, Microbiology, and Technical Services



## Certificate

CLIENT Department of Ecology  
Manchester Laboratory  
P.O. Box 346  
Manchester, WA 98353

LABORATORY NO. 93597

DATE Dec. 4, 1985

P.O. #F000973

REPORT ON SOIL

SAMPLE  
IDENTIFICATION

Submitted 10/23/85 and identified as shown below:

TESTS PERFORMED  
AND RESULTS:

- 1) #NCT055 Universal Manufacturing TV.T 10/23 1250p.
- 2) #NCT056 Universal Manufacturing TV.T 10/23 2:00
- 3) #NCT057 Universal Manufacturing TV.T 10/23 2:20
- 4) #NCT058 Universal Manufacturing TV.T 10/23 3:02
- 5) #NCT059 Universal Manufacturing TV.T 10/23 3:02

Samples were analyzed for the volatile fraction of the priority pollutants in accordance with Test Methods for Evaluating Solid Waste (SW-846), U.S.E.P.A., 1982, Method 8240.

parts per billion (ug/kg), as received basis

| <u>Volatile Organics (by GC/MS)</u> | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>Method Blank</u> |
|-------------------------------------|----------|----------|----------|----------|----------|---------------------|
| Chloromethane                       | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Bromomethane                        | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Vinyl Chloride                      | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Chloroethane                        | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Methylene Chloride                  | Trace    | Trace    | Trace    | 61.      | Trace    | L/5.                |
| Acrolein                            | L/50.    | L/50.    | L/50.    | L/50.    | L/50.    | L/50.               |
| *Acetone                            | Trace    | Trace    | Trace    | 64.      | L/5.     | Trace               |
| Acrylonitrile                       | L/50.    | L/50.    | L/50.    | L/50.    | L/50.    | L/50.               |
| *Carbon Disulfide                   | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,1-Dichloroethylene                | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,1-Dichloroethane                  | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| trans-1,2-Dichloroethylene          | L/5.     | L/5.     | Trace    | L/5.     | L/5.     | L/5.                |
| Chloroform                          | Trace    | L/5.     | L/5.     | Trace    | L/5.     | L/5.                |
| 2-Butanone                          | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,2-Dichloroethane                  | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,1,1-Trichloroethane               | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| *Vinyl Acetate                      | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Bromodichloromethane                | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Carbon Tetrachloride                | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,2-Dichloropropane                 | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Trichloroethylene                   | L/5.     | L/5.     | 150.     | 340.     | 330.     | L/5.                |



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parts per billion (ug/kg), as received basis

|                           | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>Method Blank</u> |
|---------------------------|----------|----------|----------|----------|----------|---------------------|
| Benzene                   | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Chlorodibromomethane      | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,1,2-Trichloroethane     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 2-Chloroethyl vinyl ether | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Bromoform                 | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| *4-Methyl-2-pentanone     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| *2-Hexanone               | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| 1,1,2,2-Tetrachloroethane | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Tetrachloroethylene       | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Toluene                   | L/5.     | L/5.     | L/5.     | Trace    | Trace    | L/5.                |
| Chlorobenzene             | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| trans-1,3-Dichloropropene | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Ethylbenzene              | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| cis-1,3-Dichloropropene   | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| Styrene                   | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |
| o-Xylene                  | L/5.     | L/5.     | L/5.     | L/5.     | L/5.     | L/5.                |

### Key

\* = Additional compounds from the EPA's Hazardous Substances List.

L/ = "less than"

trace = an unquantifiable amount between 5-50 parts per billion (ug/L)

### Comment

Presence of methylene chloride is most likely due to unavoidable laboratory contamination, as this is a common and pervasive laboratory solvent.



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Respectfully submitted,

Laucks Testing Laboratories, Inc.

J.M. Owens

JMO:br



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### APPENDIX

### Surrogate Recovery Quality Control Report

Listed below are surrogate (chemically similar) compounds utilized in the analysis of volatile and organic compounds. The surrogates are added to every sample prior to extraction and analysis to monitor for matrix effects, purging efficiency, and sample processing errors. The control limits represent the 95% confidence interval established in our laboratory through repetitive analysis of these sample types.

parts per billion (ug/kg)

| <u>Sample No.</u> | <u>Surrogate Compound</u> | <u>Spike Level</u> | <u>Spike Found</u> | <u>% Recovery</u> | <u>Control Limit</u> |
|-------------------|---------------------------|--------------------|--------------------|-------------------|----------------------|
| 1                 | d4-1,2-Dichloroethane     | 62.5               | 58.0               | 92.8              | 50-160               |
| 1                 | d8-Toluene                | 62.5               | 72.1               | 115.              | 50-160               |
| 1                 | p-Bromofluorobenzene      | 62.5               | 56.8               | 90.8              | 50-160               |
| 2                 | d4-1,4-Dichloroethane     | 58.4               | 54.9               | 94.0              | 50-160               |
| 2                 | d8-Toluene                | 58.4               | 65.4               | 112.              | 50-160               |
| 2                 | p-Bromofluorobenzene      | 58.4               | 58.0               | 99.3              | 50-160               |
| 3                 | d4-1,4-Dichloroethane     | 53.5               | 49.6               | 92.7              | 50-160               |
| 3                 | d8-Toluene                | 53.5               | 57.8               | 108.              | 50-160               |
| 3                 | p-Bromofluorobenzene      | 53.5               | 53.3               | 99.6              | 50-160               |



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parts per billion (ug/kg)

| <u>Sample No.</u> | <u>Surrogate Compound</u> | <u>Spike Level</u> | <u>Spike Found</u> | <u>% Recovery</u> | <u>Control Limit</u> |
|-------------------|---------------------------|--------------------|--------------------|-------------------|----------------------|
| 4 re-inject       | d4-1,4-Dichloroethane     | 243.               | 233.               | 95.9              | 50-160               |
| 4 re-inject       | d8-Toluene                | 243.               | 252.               | 104.              | 50-160               |
| 4 re-inject       | p-Bromofluorobenzene      | 243.               | 258.               | 106.              | 50-160               |
| 5 re-inject       | d4-1,4-Dichloroethane     | 163.               | 157.               | 96.3              | 50-160               |
| 5 re-inject       | d8-Toluene                | 163.               | 172.               | 106.              | 50-160               |
| 5 re-inject       | p-Bromofluorobenzene      | 163.               | 175.               | 107.              | 50-160               |
| Method Blank      | d4-1,4-Dichloroethane     | 50.                | 46.4               | 92.8              | 50-160               |
| Method Blank      | d8-Toluene                | 50.                | 51.2               | 102.              | 50-160               |
| Method Blank      | p-Bromofluorobenzene      | 50.                | 51.5               | 103.              | 50-160               |
| Method Blank1     | d4-1,4-Dichloroethane     | 50.                | 46.8               | 93.6              | 50-160               |
| Method Blank1     | d8-Toluene                | 50.                | 50.7               | 101.              | 50-160               |
| Method Blank1     | p-Bromofluorobenzene      | 50.                | 53.6               | 107.              | 50-160               |



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ENVIRONMENTAL LABORATORY  
DATA SUMMARY  
METALS

PAGE 1 OF 2

ORIGINAL TO: LAB FILES

COPIES TO:

Ned Therien

SOURCE Universal Manufacturing

PROGRAM NUMBER 868

DATE COLLECTED 10-23-85 RECEIVED 10-24-85 COLLECTED BY Ned Therien

| Sample (Log) Number | Units | Standard Deviation ± % | 437964     | 437965     | 437966     | 437967     | 437964    |  |  |
|---------------------|-------|------------------------|------------|------------|------------|------------|-----------|--|--|
| Station:            |       |                        | NCT<br>055 | NCT<br>056 | NCT<br>057 | NCT<br>058 | Duplicate |  |  |
| (Cu) Dry wt         | µg/gm |                        | 30.4       | 28.2       | 36.8       | 266        | 30.6      |  |  |
| (Zn) Dry wt         | µg/gm |                        | 182        | 282        | 343        | 640        | 181       |  |  |
| Fe                  |       |                        |            |            |            |            |           |  |  |
| (Ni) Dry wt         | µg/gm |                        | 33.4       | 30.6       | 31.2       | 77.8       | 33.2      |  |  |
| (Cr) Dry wt         | µg/gm |                        | 36.0       | 16.0       | 28.0       | 50.0       | 30.0      |  |  |
| (Cd) Dry wt         | µg/gm |                        | 0.19       | 0.47       | 0.13       | 1.19       | 0.27      |  |  |
| (Pb) Dry wt         | µg/gm |                        | <0.5       | 6.5        | 0.8        | 239        | 1.4       |  |  |
| Mn                  |       |                        |            |            |            |            |           |  |  |
| (Sb) Dry wt         | µg/gm |                        | 0.2        | 0.3        | 0.2        | 0.3        | 0.3       |  |  |
| (Be) Dry wt         | µg/gm |                        | 2.13       | 1.39       | 0.56       | 0.80       | 2.22      |  |  |

NOTE: Dissolved Metals: Those that will pass through a 0.45 µ membrane filter

Suspended Metals: Those retained by a 0.45 µ membrane filter

Total Metals: Those found in the unfiltered, rigorously acid digested sample

mg/L = ppm = µg/ml

µg/L = ppb = ng/ml

mg/kg = ppm · µg/gm  
µg/kg = ppb = ng/gm

"<" is "less than" and ">" is "greater than"



ENVIRONMENTAL LABORATORY  
DATA SUMMARY  
METALS

PAGE \_\_\_\_\_ OF \_\_\_\_\_

ORIGINAL TO: LAB FILES  
COPIES TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SOURCE Universal Manufacturing

PROGRAM NUMBER 868

DATE COLLECTED 10-23-85 RECEIVED 10-24-85 COLLECTED BY Ned Therien

| Sample (Log) Number          | Units | Standard Deviation ± % | 437964     | 437965     | 437966     | 437967     | 437964    |  |  |
|------------------------------|-------|------------------------|------------|------------|------------|------------|-----------|--|--|
| Station:                     |       |                        | NCT<br>055 | NCT<br>056 | NCT<br>057 | NCT<br>058 | Duplicate |  |  |
| (Cu) Dry wt $\mu\text{g/gm}$ |       |                        | 30.4       | 28.2       | 36.8       | 266        | 30.6      |  |  |
| Zn                           |       |                        |            |            |            |            |           |  |  |
| Fe                           |       |                        |            |            |            |            |           |  |  |
| Ni                           |       |                        |            |            |            |            |           |  |  |
| (Cr) Dry wt $\mu\text{g/gm}$ |       |                        | 36.0       | 16.0       | 28.0       | 50.0       | 30.0      |  |  |
| Cd                           |       |                        |            |            |            |            |           |  |  |
| Pb                           |       |                        |            |            |            |            |           |  |  |
| Mn                           |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |
|                              |       |                        |            |            |            |            |           |  |  |

NOTE: Dissolved Metals: Those that will pass through a 0.45  $\mu$  membrane filter

Suspended Metals: Those retained by a 0.45  $\mu$  membrane filter

Total Metals: Those found in the unfiltered, rigorously acid digested sample

mg/L = ppm =  $\mu\text{g/ml}$

$\mu\text{g/L}$  = ppb = ng/ml

mg/kg = ppm =  $\mu\text{g/gm}$

$\mu\text{g/kg}$  = ppb = ng/gm

"<" is "less than" and ">" is "greater than"



ENVIRONMENTAL LABORATORY  
DATA SUMMARY  
METALS

PAGE 2 OF 2

ORIGINAL TO: LAB FILES

COPIES TO:

Ned Therien

SOURCE Universal Manufacturing

PROGRAM NUMBER 868

DATE COLLECTED 10-23-85

RECEIVED 10-24-85

COLLECTED BY

Ned Therien

| Sample (Log) Number | Units            | Standard Deviation $\pm$ % | 437964 | 437965 | 437966 | 437967 |  | 437964    | 437966    | 437965         |  |
|---------------------|------------------|----------------------------|--------|--------|--------|--------|--|-----------|-----------|----------------|--|
| Station:            |                  |                            | NCT    | NCT    | NCT    | NCT    |  | Duplicate | Duplicate | Spike          |  |
|                     |                  |                            | 0.55   | 0.56   | 0.57   | 0.58   |  |           |           | %              |  |
| (Hg) Wet wt         | $\mu\text{g/gm}$ |                            | 0.056  | 0.043  | 0.019  | 0.215  |  |           | 0.026     | 96.7% recovery |  |
| (As) Dry wt         | $\mu\text{g/gm}$ |                            | 75.5   | 7.5    | 2.0    | 10.6   |  | 65.5      |           |                |  |
| (Se) Dry wt         | $\mu\text{g/gm}$ |                            | 1.2    | 0.5    | <0.1   | <0.1   |  | 1.0       |           |                |  |
| Ba                  |                  |                            |        |        |        |        |  |           |           |                |  |
| (Ag) Dry wt         | $\mu\text{g/gm}$ |                            | 0.09   | 0.09   | 0.04   | 0.16   |  | 0.10      |           |                |  |
| Na                  |                  |                            |        |        |        |        |  |           |           |                |  |
| K                   |                  |                            |        |        |        |        |  |           |           |                |  |
| Ca                  |                  |                            |        |        |        |        |  |           |           |                |  |
| (Pb) Dry wt         | $\mu\text{g/gm}$ |                            | 0.2    | 0.3    | 0.1    | 0.1    |  | 0.2       |           |                |  |
| % Solids            | %                |                            | 68.8   | 69.9   | 92.5   | 84.8   |  |           |           |                |  |

NOTE: Dissolved Metals: Those that will pass through a 0.45  $\mu$  membrane filter

Suspended Metals: Those retained by a 0.45  $\mu$  membrane filter

Total Metals: Those found in the unfiltered, rigorously acid digested sample

mg/L = ppm =  $\mu\text{g/ml}$

mg/kg = ppm =  $\mu\text{g/gm}$

$\mu\text{g/L}$  = ppb = ng/ml

$\mu\text{g/kg}$  = ppb = ng/gm

"<" is "less than" and ">" is "greater than"

SUMMARIZED BY

DATE 2-10-86

REVIEWED BY

DATE 2/10/86



# Preliminary Report

## ENVIRONMENTAL LABORATORY DATA SUMMARY METALS

PAGE \_\_\_\_\_ OF \_\_\_\_\_

ORIGINAL TO: LAB FILES

COPIES TO:

SOURCE Universal Manufacturing

PROGRAM NUMBER 868

DATE COLLECTED 10-23-85

RECEIVED 10-24-85

COLLECTED BY Ned Therien

| Sample (Log) Number | Units            | Standard Deviation $\pm$ % | 437964 | 437965 | 437966 | 437967 | 437964    |  |  |  |
|---------------------|------------------|----------------------------|--------|--------|--------|--------|-----------|--|--|--|
| Station:            |                  |                            | NCT    | NCT    | NCT    | NCT    | Duplicate |  |  |  |
|                     |                  |                            | 055    | 056    | 057    | 058    |           |  |  |  |
| Hg                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| (As) Dry wt         | $\mu\text{g/gm}$ |                            | 75.5   | 7.5    | 2.0    | 10.6   | 65.5      |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| Se                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| Ba                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| Ag                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| Na                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| K                   |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| Ca                  |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
|                     |                  |                            |        |        |        |        |           |  |  |  |
| % Solids            | %                |                            | 68.8   | 69.9   | 92.5   | 84.8   |           |  |  |  |

NOTE: Dissolved Metals: Those that will pass through a  $0.45 \mu$  membrane filter

Suspended Metals: Those retained by a  $0.45 \mu$  membrane filter

Total Metals: Those found in the unfiltered, rigorously acid digested sample

mg/L = ppm =  $\mu\text{g/ml}$

mg/kg = ppm =  $\mu\text{g/gm}$

$\mu\text{g/L}$  = ppb = ng/ml

$\mu\text{g/kg}$  = ppb = ng/gm

"<" is "less than" and ">" is "greater than"

SUMMARIZED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_



DATA SUMMARY

ORIGINAL TO: LAB FILES

COPIES TO:

Suzanne M. Ham

SOURCE Universal Mfg., Woodinville

DATE COLLECTED 10/24/85

COLLECTED BY Ned Therien

|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------|-------------|-------------|-------------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Sample (Log) Number          | <u>43</u> | <u>7964</u> | <u>7965</u> | <u>7966</u> | <u>7967</u> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Station:                     |           | <u>NCT</u>  | <u>NCT</u>  | <u>NCT</u>  | <u>NCT</u>  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           | <u>055</u>  | <u>056</u>  | <u>057</u>  | <u>058</u>  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pH (units)                   |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Turbidity (NTU)              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sp. Conductivity (umhos/cm)  |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| COD                          |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BOD (5 day)                  |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fecal Coliform (Col./100 ml) |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NO3-N                        |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NO2-N                        |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NH3-N                        |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Kjeldahl-N                 |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| O-P04-P                      |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Phos.-P                |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Solids                 |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Non Vol. Solids        |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Suspended Solids       |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Non Vol. Sus. Solids   |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T. Cyanide as Cn             |           | <u>0.2</u>  | <u>0.1</u>  | <u>0.1</u>  | <u>0.5</u>  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                              |           |             |             |             |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

NOTE: All results are in mg/L(ppm) unless otherwise specified. ND is "None Detected"

"<" is "Less Than" and ">" is "Greater Than"

Pam Curry

3/6/86

PD Thomas

3/7/86



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

Mr. Donald Jenkins  
Universal Manufacturing Corporation  
14410 N.E. 190th  
Woodinville, WA 98072

CONSENT FOR ACCESS TO PROPERTY

Property Address: 14410 N.E. 190th  
Woodinville, Washington

I hereby give my consent to officers, employees, contractors, and persons acting at the request of the Washington State Department of Ecology (WDOE) to enter and have access to my property located at the above property address for the following purposes: inspect for hazardous substance releases and collect samples.

Permission for access commences on October 23, 1985 and continues through October 25, 1985.

8 Oct 85  
Date

Donald Jenkins  
Signature

The WDOE is requested to provide me a duplicate of any sample(s) collected at the above property address during the time of access. I will supply the container(s) to receive the duplicate sample(s).

8 Oct 85  
Date

Donald Jenkins  
Signature

The WDOE is not requested to provide me a duplicate of any sample(s) collected at the above address during the time of access.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

SAMPLE COLLECTION RECEIPT

Property Address: Universal Manufacturing  
144 N.E. 190th Street  
Woodinville, WA 98072

On this day an officer, employee, contractor, or person acting at the request of the Washington State Department of Ecology (WDOE) collected sample(s) of the following substances from the above property address:

Four samples of soil

Numbered

NCT-055 south side of site

NCT-056 west side

NCT-057 east side

NCT-058 between buildings on east side

The person who collected the sample(s) offered a duplicate amount of the sample(s) to the owner, operator, or person in charge at the above address who was present at the site on this day.

10/23/85  
Date

Ned C. Thomson  
Signature of WDOE Representative

10/23/85  
Date

James White  
Signature of Site Owner, Operator,  
Representative



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

M E M O R A N D U M

November 5, 1985

TO: Universal Manufacturing Site File  
FROM: Suzanne Milham *SM*  
SUBJECT: PA/SI Site Investigation October 23, 1985

Wednesday, October 23, 1985 (10:30 a.m. - 4:00 p.m.)

Weather: 50°, slight wind, high clouds, overcast, no rain

Personnel: Suzanne Milham, Ned Therien

On Wednesday, October 23, 1985, I, Suzanne Milham, and Ned Therien performed a Site Investigation at the Universal Manufacturing Company, in Woodinville, Washington. This investigation was performed under the Environmental Protection Agency, Multi-Site Cooperative Agreement, Preliminary Assessment Program (PA/SI).

This facility is an electroplater which, prior to 1979, discharged all wastes to a lagoon and septic system. These have since been covered by pavement, a building, and a parking lot.

We arrived at Universal Manufacturing Company at 10:30 a.m. where we were met by Don Chang and Bill Heaton of the King County Health Department. We then conducted an interview and site tour with the company owner, Mr. Jenkins. Ned explained to Mr. Jenkins our purpose and intentions for the days inspection.

Mr. Jenkins said that this site was in a wet area, that there is much surface water flowing on site. The old process discharged wastes into an unlined lagoon for evaporation and sludges were taken to Western Processing Company in Kent. Process water and liquid wastes were discharged into a septic tank system which chronically overflowed from the drain field into the parking lot and street. Mr. Jenkins said that he dug a ditch to help divert water but this didn't prevent septic overflow. This company has discharged between 2000 gallons in 1969 to 8500 gallons per day in 1985 of waste water. This site hooked up to Metro sewers in 1980.

Mr. Jenkins said that very little cyanide was used in plating precious metals. Ferric chloride was the main contaminant that Jenkins said was present in the discharge. Jenkins said that some solvents were used in

processing but not in large quantities. Jenkins said that he now leases this site from the "PFG" company and that he sold the property to them a few years ago. Jenkins then took us on a brief site tour.

The appearance of the present day manufacturing process was quite messy. Blue crystals were growing on tanks and pipes, the floor was wet and corrosion was evident in the building. Many full open vats and 55 gallon barrels of materials were stored in several areas on site. Materials in 2 vats were tested with pH paper and exhibited pH of 2 and 12, respectively. A large tank approximately 2500 gallons was present on site in an unpaved area, this tank is believed to be full. Jenkins says this tank is used to temporarily store wastes.

Drums marked solvents, MEK waste, fluoboric acid, nickelaus fluoroborate were seen stored together in a covered paved area. None of the storage areas on site were bermed.

There was a strong chemical smell present in and around the facility and a sweet odor believed to have been cyanide fumes.

We explained to Mr. Jenkins the locations where we would like to take soil samples. Jenkins agreed, and requested split soil samples for his own keeping. Jenkins had no containers for the soil so it was agreed that we would place the samples in zip lock plastic bags.

#### Sampling

Sampling locations can be seen on the attached site sketch.

Sample NCT005 was taken first at 12:50 p.m. This location is near 190th Avenue in front of the facility near a willow tree. This sample is believed to be representative of an upgradient background soil sample. The sample was taken at a depth of approximately 1-1/2 foot. The soil is dark black, loamy, with many 1-2 inch diameter smooth rocks interspersed.

Sample NCT056 was taken on a bank along 144th Avenue. This area may have received overflow from the septic system and is downgradient from the drainfield and old lagoon. Approximately 6" of ornamental bark covered a layer of plastic, soil was dug to approximately 2 feet deep. Soil was rich black loam with small rocks and a layer of clay at approximately 2 feet where the sample was taken.

Sample NCT057 was taken from behind the main building near the large metal storage tank in an unpaved area. The soils were extremely rocky - consisting almost exclusively of smoothed gravel, medium - large rocks, and sand. Soil was dug to approximately 2 feet depth. A foul  $H_2SO_4$  smell was present in this hole, the cause is unknown. The pH of the wet soil was measured and appeared normal.

File

November 5, 1985

Page 3

Sample NCT058 was taken between the two buildings in a small unpaved area next to the circuit board shop on one side and a covered storage area on the other. Two jars were filled from a depth of approximately 2-1/2 feet deep. The second jar was a duplicate for quality control and assurance purposes. The soil was comprised of wet gravel/rocks and sand. A layer of reddish/orange material, possibly clay, was found at 2-1/2 feet. Because of its unusual appearance, this is where soil was taken for the sample. The air smelled strongly of chemicals here, possibly from the exhaust fans from the buildings which were nearby. The Draeger volumetric air pump and analyzer tube was used, and a faint trace of cyanide was detected in the air.

Sample splits were tagged and given to the receptionist at Universal Manufacturing who signed for them. A full site investigation report will be prepared when sample analyses are completed. Samples will be analyzed for heavy metals, cyanide and volatile organics (VOAS).

The VOA samples were taken to Laucks laboratory immediately after this inspection. Metals and cyanide samples were taken to the Manchester WDOE lab via courier from the Southwest Regional Office.

SM/sr





APPENDIX B

EPA Site Investigation Form



## FIELD SAMPLE DATA AND CHAIN OF CUSTODY SHEET

Project Code: 868 Account:                     

Name/Location: Universal Manufacturing

Project Officer: Ned Therien

☒ Enforcement/Custody

☒ Possible Toxic/Hazardous

☐ Data Confidential

☐ **Data for Storet**

Notes: Analyze for Volatile  
Organics

Samplers: Ned Therien  
Suzanne Milham

Recorder: Mad C. Thomas  
(Signatures Required)

[illegible]

| LAB NUMBER |    |     | DEPTH | Units | Type | COL MTD CD | QA CODE | TEMP DEG C | pH | CNDCTVTY umho/cm | MISCELLANEOUS | CHAIN OF CUSTODY RECORD      |  |  |
|------------|----|-----|-------|-------|------|------------|---------|------------|----|------------------|---------------|------------------------------|--|--|
| Yr         | Wk | Seq |       |       |      |            |         |            |    |                  |               | RELINQUISHED BY: (Signature) | RECEIVED BY: (Signature)                           | DATE/TIME                                  |
|            |    |     |       |       |      |            |         |            |    |                  |               | RELINQUISHED BY: (Signature) | RECEIVED BY: (Signature)                           | DATE/TIME                                  |
|            |    |     |       |       |      |            |         |            |    |                  |               | RELINQUISHED BY: (Signature) | RECEIVED BY: (Signature)                           | DATE/TIME                                  |
|            |    |     |       |       |      |            |         |            |    |                  |               | RELINQUISHED BY: (Signature) | RECEIVED BY: (Signature)                           | DATE/TIME                                  |
|            |    |     |       |       |      |            |         |            |    |                  |               | RELINQUISHED BY: (Signature) | REC'V'D BY MOBILE LAB FOR FIELD ANAL.: (Signature) | DATE/TIME                                  |
|            |    |     |       |       |      |            |         |            |    |                  |               | DISPATCHED BY: (Signature)   | DATE/TIME  | RECEIVED FOR LAB BY: (Signature) DATE/TIME |
|            |    |     |       |       |      |            |         |            |    |                  |               | METHOD OF SHIPMENT           |  |  |



☒ Enforcement/Custody☒ Possible Toxic/Hazardous

☐ Data Confidential

☐ Data for Storet

Notes: Please analyze for  
purgeable chlorinated hydrocarbons  
prior, Pollutant Metals, and Cyanide

Samplers: Ned Therien

Suzanne M. Ham

Recorder: Neil C. Shaw  
(Signatures Required)

*(Signatures Required)*

[illegible][illegible]





POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION  
01 STATE WA 02 SITE NUMBER D044038073

II. SITE NAME AND LOCATION

|   |                       |   |                          |                |              |
|---|-----------------------|---|--------------------------|----------------|--------------|
| 01 SITE NAME (Legal, common, or descriptive name of site)<br><b>Universal Manufacturing</b> |                       | 02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER<br><b>14410 NE 190th</b>  |                          |                |              |
| 03 CITY<br><b>Woodinville</b>   | 04 STATE<br><b>WA</b> | 05 ZIP CODE<br><b>98072</b>   | 06 COUNTY<br><b>King</b> | 07 COUNTY CODE | 08 CONG DIST |
| 09 COORDINATES<br>LATITUDE <b>47 39</b> LONGITUDE <b>122 08 45"</b>                         |                       | 10 TYPE OF OWNERSHIP (Check one)<br><input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN |                          |                |              |

III. INSPECTION INFORMATION

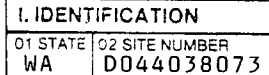
|  |   |  |  |
|--|---|--|--|
| 01 DATE OF INSPECTION<br><b>10 23 85</b><br>MONTH DAY YEAR   | 02 SITE STATUS<br><input checked="" type="checkbox"/> ACTIVE<br><input type="checkbox"/> INACTIVE | 03 YEARS OF OPERATION<br><b>1968</b>   <b>Present</b>   <b>UNKNOWN</b><br>BEGINNING YEAR ENDING YEAR |  |
| 04 AGENCY PERFORMING INSPECTION (Check all that apply)<br><input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR<br><input checked="" type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR <b>Ecology</b> <small>(Name of firm)</small> <input type="checkbox"/> G. OTHER <small>(Specify)</small> |   |  |  |

|  |                                     |   |   |
|--|-------------------------------------|---|---|
| 05 CHIEF INSPECTOR<br><b>Suzanne Milham</b>                      | 06 TITLE<br><b>Environmentalist</b> | 07 ORGANIZATION<br><b>Ecology</b>           | 08 TELEPHONE NO.<br><b>(206) 459-6319</b>   |
| 09 OTHER INSPECTORS<br><b>Ned Therien</b>                        | 10 TITLE<br><b>Environmentalist</b> | 11 ORGANIZATION<br><b>Ecology</b>           | 12 TELEPHONE NO.<br><b>( ) N/A</b>          |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
| 13 SITE REPRESENTATIVES INTERVIEWED<br><b>Mr. Donald Jenkins</b> | 14 TITLE<br><b>Owner</b>            | 15 ADDRESS<br><b>144410 NE 190th Street</b> | 16 TELEPHONE NO.<br><b>( ) 206 486-0791</b> |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |
|  |                                     |   | <b>( )</b>                                  |

|  |  |  |
|--|--|--|
| 17 ACCESS GAINED BY<br>(Check one)<br><input checked="" type="checkbox"/> PERMISSION<br><input type="checkbox"/> WARRANT | 18 TIME OF INSPECTION<br><b>10:30 a.m.</b> | 19 WEATHER CONDITIONS<br><b>50° partial clearing, variable winds</b> |
|--|--|--|

IV. INFORMATION AVAILABLE FROM

|   |  |                                 |   |
|---|--|---------------------------------|---|
| 01 CONTACT<br><b>Suzanne Milham</b>                                     | 02 OF (Agency/Organization)<br><b>Washington State Department of Ecology</b> |                                 | 03 TELEPHONE NO.<br><b>(206) 459-6319</b>   |
| 04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM<br><b>Suzanne Milham</b> | 05 AGENCY<br><b>Ecology</b>  | 06 ORGANIZATION<br><b>State</b> | 07 TELEPHONE NO.<br><b>(206) 459-6319</b>   |
|   |  |                                 | 08 DATE<br><b>1 27 86</b><br>MONTH DAY YEAR |



03 WASTE CHARACTERISTICS (Check all that apply)

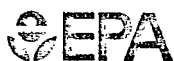
|  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> A. TOXIC       | <input type="checkbox"/> E. SOLUBLE    | <input type="checkbox"/> I. HIGHLY VOLATILE |
| <input checked="" type="checkbox"/> B. CORROSIVE   | <input type="checkbox"/> F. INFECTIOUS | <input type="checkbox"/> J. EXPLOSIVE       |
| <input checked="" type="checkbox"/> C. RADIOACTIVE | <input type="checkbox"/> G. FLAMMABLE  | <input type="checkbox"/> K. REACTIVE        |
| <input checked="" type="checkbox"/> D. PERSISTENT  | <input type="checkbox"/> H. IGNITABLE  | <input type="checkbox"/> L. INCOMPATIBLE    |
|  |  | <input type="checkbox"/> M. NOT APPLICABLE  |

| CATEGORY | SUBSTANCE NAME          | 01 GROSS AMOUNT | 02 UNIT OF MEASURE | 03 COMMENTS       |
|----------|-------------------------|-----------------|--------------------|-------------------|
| SLU      | SLUDGE                  |                 |                    |                   |
| OLW      | OILY WASTE              |                 |                    |                   |
| SOL      | SOLVENTS                | 100 gal/month   |                    | 1968-65 to lagoon |
| PSD      | PESTICIDES              |                 |                    |                   |
| OCC      | OTHER ORGANIC CHEMICALS |                 |                    |                   |
| IOC      | INORGANIC CHEMICALS     | Unknown         | N/A                |                   |
| ACD      | ACIDS                   | Unknown         | N/A                |                   |
| BAS      | BASES                   | Unknown         | N/A                |                   |
| MES      | HEAVY METALS            | Unknown         | N/A                |                   |

[illegible]

| CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER | CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER |
|----------|-------------------|---------------|----------|-------------------|---------------|
| FDS      |                   |               | FDS      |                   |               |
| FDS      |                   |               | FDS      |                   |               |
| FDS      |                   |               | FDS      |                   |               |
| FDS      |                   |               | FDS      |                   |               |

## EPA FORM 2070-13 (7-81)



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

Shallow aquifer is in glacial drift with some lenses of fill. Approximately 1,000 people served by domestic wells within three miles. GW at 30 ft. Ecology soil analysis on 10/23/85 show contamination with volatile organics, trichloroethylene, a ~~crylonitrile and methylene chloride great potential for gw contamination.~~

01 ☐ B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: 1975) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

Waste waters from plating operation ponding above drainfield and draining into unnamed tributary of Bear Creek. Waste contains cyanide, heavy metals (Pb, Cu) ammonia etchant. Numerous violations in 1970, no surface water sampling has been done.

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: 1986) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: 1,500 04 NARRATIVE DESCRIPTION

1,500 residents +300 transients within one mile. A drager tube detected cyanide contamination in the air, this is believed to have been due to present day operations.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

No known or certified fire threat. Fire at plant in 1980 resulted from electrical sparks; not hazardous materials.

01 ☐ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: <100 04 NARRATIVE DESCRIPTION

The site is partially fenced. There is little potential for direct contact.

01 ☒ F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED: <2 (Acres) 04 NARRATIVE DESCRIPTION

Prior to 1975, wastes were discharged to a septic drainfield and lagoon. Soil samples taken by Ecology on 10/23/85 showed soil contaminated with trichloroethylene, acetone.

01 ☒ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: 1,000 04 NARRATIVE DESCRIPTION

1,000 people within a three mile radius use ground water for drinking. Because facility discharged waste through septic system for a number of years and soil samples collected by Ecology 10/23/85 were contaminated, there is a potential for ~~drinking water to be contaminated.~~

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED: <50 04 NARRATIVE DESCRIPTION

Documented (Ecology) improperly labeled and unlabeled drums of hazardous chemicals on site; some leaking with no lids or bungs. High potential exists for worker exposure through improper waste handling.

01 ☐ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: 1,000 04 NARRATIVE DESCRIPTION

Potential for exposure mostly through potential contamination of ground water or through worker exposure. One thousand people are served by wells within a three mile radius.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

Potential damage to flora of Bear Creek in 1970's from overflow of septic drainfield and discharge of wastes to Bear Creek.

01 ☒ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION (include names of species)

Potential damage to fauna of Bear Creek in 1970's from overflow of septic drainfield and discharge of materials to Bear Creek.

01 ☐ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

None known. Potential for food chain contamination is unknown. It is possible that fish could accumulate heavy metals.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES 02 ☐ OBSERVED (DATE: 70, 82, 85) ☐ POTENTIAL ☐ ALLEGED  
(Spills, Runoff, Standing liquids, Leaking drums)

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

Drums stored on unpaved area without lids, bungs, numerous sewer discharge violations, in large quantities of drummed and tanked waste stored improperly on site during 1985 inspection.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

None Reported

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

Permitted for 31,000 gpd discharge by Metro - numerous violations of copper discharge limitations in 1982, discharged contents of acid tank without neutralizing it first.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☒ OBSERVED (DATE: 1970's, 82) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

Numerous violations of sewer discharge limitations for copper. Company sometimes diverted pleuing rinse water to "surface waters" when drainfield was plugged.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Ecology sampling showed contaminated soils, potential for groundwater to become contaminated. Old waste lagoon is now covered by concrete and a building, there may be leaching from this lagoon.

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

Further sampling should be done to determine if the groundwater is contaminated. A RCRA inspection should be done at this site to determine and limit present waste storage practices.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Ecology site inspection 10/23/85, WA State Department of Fisheries/catalog of streams. EPA Preliminary Assessment 1984. EPA Files, Ecology Fiels, DSHS computer files, U.S. Census 1980; USGS bothess Quad 1973, Geohydro-mono-5; Water Supply Bull. #20.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION  
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE WA 02 SITE NUMBER D044038073

II. PERMIT INFORMATION

|  |                  |                |                    |                    |
|--|------------------|----------------|--------------------|--------------------|
| 01 TYPE OF PERMIT ISSUED<br>(Check all that apply)     | 02 PERMIT NUMBER | 03 DATE ISSUED | 04 EXPIRATION DATE | 05 COMMENTS        |
| <input type="checkbox"/> A. NPDES                      |                  |                |                    |                    |
| <input type="checkbox"/> B. UIC                        |                  |                |                    |                    |
| <input type="checkbox"/> C. AIR                        |                  |                |                    |                    |
| <input checked="" type="checkbox"/> D. RCRA            |                  |                |                    |                    |
| <input type="checkbox"/> E. RCRA INTERIM STATUS        |                  |                |                    |                    |
| <input type="checkbox"/> F. SPCC PLAN                  |                  |                |                    |                    |
| <input checked="" type="checkbox"/> G. STATE (Specify) | 7133             | 8/29/79        | 8/29/84            | Metro permit sewer |
| <input type="checkbox"/> H. LOCAL (Specify)            |                  |                |                    |                    |
| <input type="checkbox"/> I. OTHER (Specify)            |                  |                |                    |                    |
| <input type="checkbox"/> J. NONE                       |                  |                |                    |                    |

III. SITE DESCRIPTION

|  |           |                    |  |  |
|--|-----------|--------------------|--|--|
| 01 STORAGE/DISPOSAL (Check all that apply)                 | 02 AMOUNT | 03 UNIT OF MEASURE | 04 TREATMENT (Check all that apply)                  | 05 OTHER   |
| <input checked="" type="checkbox"/> A. SURFACE IMPOUNDMENT |           |                    | <input type="checkbox"/> A. INCENERATION             | <input checked="" type="checkbox"/> A. BUILDINGS ON SITE |
| <input type="checkbox"/> B. PILES                          |           |                    | <input type="checkbox"/> B. UNDERGROUND INJECTION    |  |
| <input checked="" type="checkbox"/> C. DRUMS, ABOVE GROUND |           |                    | <input type="checkbox"/> C. CHEMICAL/PHYSICAL        |  |
| <input checked="" type="checkbox"/> D. TANK, ABOVE GROUND  |           |                    | <input type="checkbox"/> D. BIOLOGICAL               |  |
| <input type="checkbox"/> E. TANK, BELOW GROUND             |           |                    | <input type="checkbox"/> E. WASTE OIL PROCESSING     |  |
| <input type="checkbox"/> F. LANDFILL                       |           |                    | <input type="checkbox"/> F. SOLVENT RECOVERY         | 06 AREA OF SITE  |
| <input type="checkbox"/> G. LANDFARM                       |           |                    | <input type="checkbox"/> G. OTHER RECYCLING/RECOVERY | <2 (Acres)   |
| <input type="checkbox"/> H. OPEN DUMP                      |           |                    | <input type="checkbox"/> H. OTHER (Specify)          |  |
| <input type="checkbox"/> I. OTHER (Specify)                |           |                    |  |  |

07 COMMENTS

A lagoon and septic system were used for waste disposal from 1968 - 1975; the facility now is hooked up to METRO sewers. The lagoon has been covered by a building. There are many drums and tanks full of waste chemicals stored on site.

IV. CONTAINMENT

|                                      |  |                                      |  |   |
|--------------------------------------|--|--------------------------------------|--|---|
| 01 CONTAINMENT OF WASTES (Check one) | <input type="checkbox"/> A. ADEQUATE, SECURE | <input type="checkbox"/> B. MODERATE | <input type="checkbox"/> C. INADEQUATE, POOR | <input checked="" type="checkbox"/> D. INSECURE, UNSOUND, DANGEROUS |
|--------------------------------------|--|--------------------------------------|--|---|

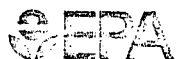
|   |
|---|
| 02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.                                 |
| Site is partially paved and not bermed. There are wastes being stored in unpaved areas. |

V. ACCESSIBILITY

|   |
|---|
| 01 WASTE EASILY ACCESSIBLE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| 02 COMMENTS   |

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Ecology Site Inspection 10/23/85 and analysis results - EPA ERRIS Files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY  
(Check as applicable)

SURFACE WELL  
COMMUNITY A. ☐ B. ☐  
NON-COMMUNITY C. ☐ D. ☒

02 STATUS

ENDANGERED AFFECTED MONITORED  
A. ☐ B. ☐ C. ☐  
D. ☒ E. ☐ F. ☐

03 DISTANCE TO SITE

A. \_\_\_\_\_ (mi)  
B. 3/4 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING  
(Other sources available)  
COMMERCIAL, INDUSTRIAL, IRRIGATION  
(No other water sources available)  
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION  
(Limited other sources available)  
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 1,000

03 DISTANCE TO NEAREST DRINKING WATER WELL 3/4 (mi)

04 DEPTH TO GROUNDWATER

30 (ft)

05 DIRECTION OF GROUNDWATER FLOW

06 DEPTH TO AQUIFER  
OF CONCERN

30 (ft)

07 POTENTIAL YIELD  
OF AQUIFER

Unknown (gpd)

08 SOLE SOURCE AQUIFER

☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

The nearest well is 3/4 of a mile to the north of the site; this well is  
for residential use.

10 RECHARGE AREA

☐ YES  
☐ NO  
COMMENTS  
Unknown

11 DISCHARGE AREA

☐ YES  
☒ NO  
COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION  
DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY  
IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED POTENTIALLY AFFECTED BODIES OF WATER

NAME:

Bear Creek and its tributaries

AFFECTED

☒

DISTANCE TO SITE

1/4 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE  
A. 1800  
NO. OF PERSONS

TWO (2) MILES OF SITE  
B. <3000  
NO. OF PERSONS

THREE (3) MILES OF SITE  
C. <4000  
NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

<1/4 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

<2000

04 DISTANCE TO NEAREST OFF-SITE BUILDING

<1/4 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

This site is in a fairly rural area, there are both farms and residences within  
3 miles.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE WA 02 SITE NUMBER D044038073

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A.  $10^{-6} - 10^{-8}$  cm/sec ☐ B.  $10^{-4} - 10^{-6}$  cm/sec ☐ C.  $10^{-4} - 10^{-3}$  cm/sec ☒ D. GREATER THAN  $10^{-3}$  cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than  $10^{-6}$  cm/sec) ☐ B. RELATIVELY IMPERMEABLE ( $10^{-4} - 10^{-6}$  cm/sec) ☐ C. RELATIVELY PERMEABLE ( $10^{-2} - 10^{-4}$  cm/sec) ☒ D. VERY PERMEABLE (Greater than  $10^{-2}$  cm/sec)

03 DEPTH TO BEDROCK

\_\_\_\_\_(ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

Unknown (ft)

05 SOIL pH

06 NET PRECIPITATION

\_\_\_\_\_(in)

07 ONE YEAR 24 HOUR RAINFALL

\_\_\_\_\_(in)

08 SLOPE  
SITE SLOPE

4.5 %

DIRECTION OF SITE SLOPE

SW

TERRAIN AVERAGE SLOPE

%

09 FLOOD POTENTIAL

SITE IS IN None YEAR FLOODPLAIN

10

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

OTHER

A. \_\_\_\_\_ (mi)

B. \_\_\_\_\_ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

\_\_\_\_\_ (mi)

ENDANGERED SPECIES: \_\_\_\_\_

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS: NATIONAL/STATE PARKS,  
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS  
PRIME AG LAND AG LAND

A. <1 (mi)

B. <1/2 (mi)

C. \_\_\_\_\_ (mi) D. 1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is on a sloping hillside in a residential, rural industrial area. The site is midway down a hillside with approximately a 20° slope overall. Drainage runs from the top of this hill through the site and into an unnamed tributary of Bear Creek. Bear Creek is approximately 1/2 mile from the site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USEPA, 1984 Preliminary Assessment  
10/23/85 Ecology Site Inspection



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II. SAMPLES TAKEN

| SAMPLE TYPE   | 01 NUMBER OF<br>SAMPLES TAKEN | 02 SAMPLES SENT TO           | 03 ESTIMATED DATE<br>RESULTS AVAILABLE |
|---------------|-------------------------------|------------------------------|--|
| GROUNDWATER   |                               |                              |  |
| SURFACE WATER |                               |                              |  |
| WASTE         |                               |                              |  |
| AIR           |                               |                              |  |
| RUNOFF        |                               |                              |  |
| SPILL         |                               |                              |  |
| SOIL          | 4                             | Manchester Environmental Lab | 3/86                                   |
| VEGETATION    |                               |                              |  |
| OTHER         |                               |                              |  |

III. FIELD MEASUREMENTS TAKEN

| 01 TYPE | 02 COMMENTS |
|---------|-------------|
| None    |             |
|         |             |
|         |             |
|         |             |
|         |             |

IV. PHOTOGRAPHS AND MAPS

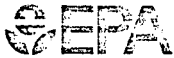
|  |  |
|--|--|
| 01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL | 02 IN CUSTODY OF <u>Ecology</u><br><small>(Name of organization or individual)</small> |
| 03 MAPS<br><input type="checkbox"/> YES<br><input checked="" type="checkbox"/> NO  | 04 LOCATION OF MAPS<br>_____   |

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., State files, sample analysis reports)

Ecology Site Inspection 10/23/85, EPA ERRIS Files, EPA 1984  
Preliminary Assessment, Geohydro. Mono. 5. Water Supply Bulletin #20.





POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II. CURRENT OWNER(S)

PARENT COMPANY (If applicable)

|  |  |  |                             |  |  |   |  |  |               |  |  |          |  |  |             |  |  |
|--|--|--|-----------------------------|--|--|---|--|--|---------------|--|--|----------|--|--|-------------|--|--|
| 01 NAME<br>Donald Jenkins  |  |  | 02 D+B NUMBER<br>D044038073 |  |  | 08 NAME                                   |  |  | 09 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)<br>14410 NE 190th Street |  |  | 04 SIC CODE<br>2679         |  |  | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 11 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY<br>Woodinville   |  |  | 06 STATE<br>WA              |  |  | 07 ZIP CODE<br>98072                      |  |  | 12 CITY       |  |  | 13 STATE |  |  | 14 ZIP CODE |  |  |
| 01 NAME  |  |  | 02 D+B NUMBER               |  |  | 08 NAME                                   |  |  | 09 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)                          |  |  | 04 SIC CODE                 |  |  | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 11 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY  |  |  | 06 STATE                    |  |  | 07 ZIP CODE                               |  |  | 12 CITY       |  |  | 13 STATE |  |  | 14 ZIP CODE |  |  |
| 01 NAME  |  |  | 02 D+B NUMBER               |  |  | 08 NAME                                   |  |  | 09 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)                          |  |  | 04 SIC CODE                 |  |  | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 11 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY  |  |  | 06 STATE                    |  |  | 07 ZIP CODE                               |  |  | 12 CITY       |  |  | 13 STATE |  |  | 14 ZIP CODE |  |  |
| 01 NAME  |  |  | 02 D+B NUMBER               |  |  | 08 NAME                                   |  |  | 09 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)                          |  |  | 04 SIC CODE                 |  |  | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 11 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY  |  |  | 06 STATE                    |  |  | 07 ZIP CODE                               |  |  | 12 CITY       |  |  | 13 STATE |  |  | 14 ZIP CODE |  |  |

III. PREVIOUS OWNER(S) (List most recent first)

IV. REALTY OWNER(S) (If applicable, list most recent first)

|   |  |  |               |  |  |   |  |  |               |  |  |          |  |  |             |  |  |
|---|--|--|---------------|--|--|---|--|--|---------------|--|--|----------|--|--|-------------|--|--|
| 01 NAME                                   |  |  | 02 D+B NUMBER |  |  | 01 NAME                                   |  |  | 02 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY                                   |  |  | 06 STATE      |  |  | 07 ZIP CODE                               |  |  | 05 CITY       |  |  | 06 STATE |  |  | 07 ZIP CODE |  |  |
| 01 NAME                                   |  |  | 02 D+B NUMBER |  |  | 01 NAME                                   |  |  | 02 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY                                   |  |  | 06 STATE      |  |  | 07 ZIP CODE                               |  |  | 05 CITY       |  |  | 06 STATE |  |  | 07 ZIP CODE |  |  |
| 01 NAME                                   |  |  | 02 D+B NUMBER |  |  | 01 NAME                                   |  |  | 02 D+B NUMBER |  |  |          |  |  |             |  |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  |  | 04 SIC CODE   |  |  |          |  |  |             |  |  |
| 05 CITY                                   |  |  | 06 STATE      |  |  | 07 ZIP CODE                               |  |  | 05 CITY       |  |  | 06 STATE |  |  | 07 ZIP CODE |  |  |

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USEPA, 1984 Preliminary Assessment.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

WA 0044038073

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

|  |                                    |   |                                    |
|--|------------------------------------|---|------------------------------------|
| 01 NAME<br>Universal Manufacturing                                 | 02 D+B NUMBER<br>WAD044038073      | 10 NAME                                   | 11 D+B NUMBER                      |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)<br>14410 NE 190th Street | 04 SIC CODE<br>2679                | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE                        |
| 05 CITY<br>Woodinville   | 06 STATE<br>WA                     | 07 ZIP CODE<br>98072                      | 14 CITY<br>15 STATE<br>16 ZIP CODE |
| 08 YEARS OF OPERATION<br>1968-present                              | 09 NAME OF OWNER<br>Donald Jenkins |   |                                    |

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (if applicable)

|   |                                     |   |                                    |
|---|-------------------------------------|---|------------------------------------|
| 01 NAME                                   | 02 D+B NUMBER                       | 10 NAME                                   | 11 D+B NUMBER                      |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE                         | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE                        |
| 05 CITY                                   | 06 STATE                            | 07 ZIP CODE                               | 14 CITY<br>15 STATE<br>16 ZIP CODE |
| 08 YEARS OF OPERATION                     | 09 NAME OF OWNER DURING THIS PERIOD |   |                                    |
| 01 NAME                                   | 02 D+B NUMBER                       | 10 NAME                                   | 11 D+B NUMBER                      |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE                         | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE                        |
| 05 CITY                                   | 06 STATE                            | 07 ZIP CODE                               | 14 CITY<br>15 STATE<br>16 ZIP CODE |
| 08 YEARS OF OPERATION                     | 09 NAME OF OWNER DURING THIS PERIOD |   |                                    |
| 01 NAME                                   | 02 D+B NUMBER                       | 10 NAME                                   | 11 D+B NUMBER                      |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE                         | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE                        |
| 05 CITY                                   | 06 STATE                            | 07 ZIP CODE                               | 14 CITY<br>15 STATE<br>16 ZIP CODE |
| 08 YEARS OF OPERATION                     | 09 NAME OF OWNER DURING THIS PERIOD |   |                                    |

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USEPA, 1984 Preliminary Assessment Report.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

WA D044038073

II. ON-SITE GENERATOR

|  |                |                               |  |
|--|----------------|-------------------------------|--|
| 01 NAME<br>Universal Manufacturing                                 |                | 02 D+B NUMBER<br>WAD044038073 |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.)<br>14410 NE 190th Street |                | 04 SIC CODE<br>2679           |  |
| 05 CITY<br>Woodinville   | 06 STATE<br>WA | 07 ZIP CODE<br>98072          |  |

III. OFF-SITE GENERATOR(S)

|   |  |               |  |   |  |               |  |          |  |             |  |
|---|--|---------------|--|---|--|---------------|--|----------|--|-------------|--|
| 01 NAME<br>None                           |  | 02 D+B NUMBER |  | 01 NAME                                   |  | 02 D+B NUMBER |  |          |  |             |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  |          |  |             |  |
| 05 CITY                                   |  | 06 STATE      |  | 07 ZIP CODE                               |  | 05 CITY       |  | 06 STATE |  | 07 ZIP CODE |  |
| 01 NAME                                   |  | 02 D+B NUMBER |  | 01 NAME                                   |  | 02 D+B NUMBER |  |          |  |             |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  |          |  |             |  |
| 05 CITY                                   |  | 06 STATE      |  | 07 ZIP CODE                               |  | 05 CITY       |  | 06 STATE |  | 07 ZIP CODE |  |

IV. TRANSPORTER(S)

|   |  |               |  |   |  |               |  |          |  |             |  |
|---|--|---------------|--|---|--|---------------|--|----------|--|-------------|--|
| 01 NAME                                   |  | 02 D+B NUMBER |  | 01 NAME                                   |  | 02 D+B NUMBER |  |          |  |             |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  |          |  |             |  |
| 05 CITY                                   |  | 06 STATE      |  | 07 ZIP CODE                               |  | 05 CITY       |  | 06 STATE |  | 07 ZIP CODE |  |
| 01 NAME                                   |  | 02 D+B NUMBER |  | 01 NAME                                   |  | 02 D+B NUMBER |  |          |  |             |  |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) |  | 04 SIC CODE   |  |          |  |             |  |
| 05 CITY                                   |  | 06 STATE      |  | 07 ZIP CODE                               |  | 05 CITY       |  | 06 STATE |  | 07 ZIP CODE |  |

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USEPA ERRIS Files  
WDOE Files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

WA D044038073

II. PAST RESPONSE ACTIVITIES

01 ☒ A. WATER SUPPLY CLOSED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ B. TEMPORARY WATER SUPPLY PROVIDED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ C. PERMANENT WATER SUPPLY PROVIDED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ D. SPILLED MATERIAL REMOVED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ E. CONTAMINATED SOIL REMOVED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ F. WASTE REPACKAGED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ G. WASTE DISPOSED ELSEWHERE  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

Some process waste is taken to Arlington Oregon

01 ☒ H. ON SITE BURIAL  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ I. IN SITU CHEMICAL TREATMENT  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ J. IN SITU BIOLOGICAL TREATMENT  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ K. IN SITU PHYSICAL TREATMENT  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ L. ENCAPSULATION  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ M. EMERGENCY WASTE TREATMENT  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ N. CUTOFF WALLS  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ O. EMERGENCY DIKING/SURFACE WATER DIVERSION  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ P. CUTOFF TRENCHES/SUMP  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ Q. SUBSURFACE CUTOFF WALL  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
WA D044038073

II PAST RESPONSE ACTIVITIES (Continued)

01 ☒ R. BARRIER WALLS CONSTRUCTED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ S. CAPPING/COVERING  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ T. BULK TANKAGE REPAIRED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ U. GROUT CURTAIN CONSTRUCTED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ V. BOTTOM SEALED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ W. GAS CONTROL  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ X. FIRE CONTROL  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ Y. LEACHATE TREATMENT  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ Z. AREA EVACUATED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ 1. ACCESS TO SITE RESTRICTED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ 2. POPULATION RELOCATED  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

No

01 ☒ 3. OTHER REMEDIAL ACTIVITIES  
04 DESCRIPTION

02 DATE \_\_\_\_\_

03 AGENCY \_\_\_\_\_

There have been no remedial activities at this site.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

USEPA ERRIS Files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

|                |                              |
|----------------|------------------------------|
| 01 STATE<br>WA | 02 SITE NUMBER<br>D044038073 |
|----------------|------------------------------|

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

METRO has sited Universal Manufacturing on several occasions for exceeding their permit limits on copper in their waste stream. A \$250 penalty was levied by Ecology ordering that Universal Manufacturing stop discharging contaminated water to surface water on the ground. This order also directed them to stop using their septic system drain field for disposal of contaminated materials.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USEPA ERRIS Files  
WDOE NWRO Files, EPA Preliminary Assessment





APPENDIX C

Photographic Documentation



All photos were taken by  
Suzanne E. Milham on 10/23/85  
using a Canon Sureshot camera  
with asa 100 film, on automatic  
light and shutter settings.



NCT058+NCT059 were taken of  
soil on the east side of the  
facility between the process  
buildings near a storm drain.



At approximately 2 feet deep there was an orangish color to the soil. This location was immediatly adjacent to where several open full drums of chemicals were being stored.



Background sample #NCT055 being  
collected on the South side of  
the complex by Ned Therien.





Sample NCT056 was taken here on  
the West side of the complex  
near where the old septic  
leach field was located.  
Ned Therien is seen collecting  
the sample.



Sample NCT057 was taken near  
an unpaved waste storage area  
on the east side of the site.  
The large storage tank which  
was full at the time of the  
inspection can be clearly seen  
in these photos. 21



Sampling location NCT058+059



Sample NCT057 was taken in this location, the type of sand and gravel soils present can be seen in this photo.







APPENDIX D

Site Inspection Sampling Report

UNIVERSAL MANUFACTURING COMPANY  
WOODINVILLE, WASHINGTON

SITE INVESTIGATION SAMPLING PLAN

SEPTEMBER 1985

Prepared by

Suzanne E. Milham  
Washington State Department of Ecology

Site Sampling Plan Summary

Site: Universal Manufacturing Company  
144 N.E. 190th Street  
Woodinville, WA 98072

Section 3, Township 26N, Range 5E, WM

Proposed Date of Investigation: \_\_\_\_\_

Preparer: Suzanne E. Milham

Reviewed by: \_\_\_\_\_  
Project Officer, EPA Date

\_\_\_\_\_  
Site Inspection Team Leader Date

\_\_\_\_\_  
Site Inspection Team Member Date  
Health and Safety Coordinator

## I. INTRODUCTION

The purpose of this plan is to detail the program of site investigation sampling activities to be carried out by the WDOE PA/SI team at Universal Manufacturing Company.

## II. SITE DESCRIPTION AND WASTE CHARACTERISTICS

This facility is an electroplater which, prior to 1975, discharged all process waters, solvents, and other liquid wastes through a lagoon on septic system. The lagoon has since been filled in and the facility now discharges to Metro Sewers. There were chronic problems with septic drainfield overflow when in use. The site is in a rural area near Bear Creek which is used for salmonid spawning. The groundwater which is shallow at a 30 foot depth is utilized by approximately 1000 people within a 3 mile radius. Hazardous wastes at this site include chlorinated solvents, cyanide, acids, heavy metals.

## III. OBJECTIVES

Sampling of groundwater will be carried out to determine if contamination is present. Soil core samples will also be taken. Two well water and four soil samples will be taken. Priority pollutant scans for heavy metals, chlorinated solvents, cyanide, volatile organics, and acids will be done.

## IV. SAMPLE COLLECTION/ANALYSIS PARAMETERS

Two samples of the groundwater will be taken, one at the Drinkel well 3/4 mile north of the site, if possible. This is the nearest down-gradient well. A second groundwater sample will be taken from a later identified upgradient background well. Core soil samples will be taken as close to the drainfield and lagoon as possible.

~~If any leachate is present, it will be sampled as well.~~

The following table outlines the numbers of samples to be taken and the parameters for which they will be analyzed.

### Sample Information

#### Groundwater Samples

1 - Drinkel well 3/4 mile  
north of site

1 - background well

1 - transport blank

~~1 - leachate if available~~

#### Analysis Parameters

Cyanide  
Chlorinated solvents  
Heavy metals

Chromium, copper  
Lead, zinc, palladium  
Phosphoric acid

Volatile organics

### Core Soil Samples

3 - Soil samples around drain-field and lagoon

*1 - soil background*

Sample splits will be made available upon request to the site owners.

### Analysis Parameters

Cyanide

Heavy metals

~~Chromium, copper~~

~~Lead, zinc, palladium~~

~~Phosphoric acid~~

Volatile organics

*perceivable chlorinated HC*

### Equipment List

| EQUIPMENT   | USE  |
|---|--|
| Sample Containers   | Appropriate to analyses desired (see Table)  |
| Sample Preservatives                                      | See Table  |
| Field Blanks  | See Table  |
| Keys  | For locked monitoring wells.   |
| Pipe wrenches   | May be necessary to remove steel security cap on wells which have not been recently opened and sampled.    |
| Tape measure  | Use to measure diameter of well casing above ground level.   |
| Electronic water level indicator/ graduated depth sounder | Used to determine static water level and total depth of well.  |
| Pocket Calculator   | Use for static water volume calculations.  |
| Pump  | Use to purge or evacuate well prior to obtaining sample; it is not a recommended means to obtain a sample. |
| Sampling Trier  | Collect soil samples at depths of up to several feet below surface.  |
| Stainless Steel Mixing Bowl                               | Composite soil samples.  |
| Stainless Steel Spoons                                    | Soil sample collection.  |
| Teflon Well Bailer  | A bailer is a device which is lowered into a well to obtain water samples.                                 |

## EQUIPMENT

## USE

Monofilament Line

Use for lowering bailer into well; should be of sufficient strength to hold full bailer and overcome any resistance between well casing and bailer. The use of any other type of line is not recommended. Steel wire might be an appropriate substitute but can cause handling problems for personnel wearing gloves.

Decontamination solutions/water (Methanol)

Use for decontaminating sampling equipment, bailer, and water level indicator between samples.

Plastic pails, graduated

Use for measuring volume of water taken from well prior to sampling.

Thermometer

Use to measure temperature of ground-water.

Field logbook

Used to record field observations.

Camera/film

Use to document sampling procedure.

Sample tags

Chain-of-custody records

Receipt for sample forms

Waterproof ink pen

Compass

### Field Measurements and Observations

The following field measurements and observations will be logged:

- 1) Measure the diameter of the well casings.
- 2) Note the casing materials (i.e., pvc, steel, etc.).
- 3) Available well log information noted.
- 4) Weather conditions, air temperature, sky conditions, etc.
- 5) Physical observable characteristics of water.
- 6) Observations about well characteristics.
- 7) Temperature of water before and after purging.

### Groundwater Sampling Procedures

A clean Teflon bailer will be used to obtain water to fill sample containers. This bailer will be lowered into the well on a mono-filament nylon line. Care will be taken to avoid agitation, which may promote the loss of volatile constituents from the samples.

### Soil Sampling Procedures

Surface soil will be removed with a shovel to a depth of 24". Soil samples will be collected with a specially cleaned stainless steel sampling trier, trowel or spoon at this level. Soil samples will be composited in pairs by mixing in a stainless steel bowl.

### Decontamination Procedures for Sampling Equipment

After equipment such as the bailer is used for sampling, it will be decontaminated before being used to sample another location. This will prevent cross contamination.

Equipment will first be washed with soap and water solution; then rinsed with clean water.

After this, equipment will be rinsed with methanol and water mixture and then triple rinsed with deionized water and let to air dry.

### Department of Ecology Chain of Custody Procedures

#### Background

These procedures were adopted for use by the Department of Ecology from those used by the EPA Region X Surveillance and Analysis Division. A documented record of sample handling is necessary for special studies involving compliance monitoring or other enforcement-related activities in which the data may be used in litigation. The evidence-gathering portion of a survey is characterized by the minimum number of samples required to give a fair representation of the effluent, or water body, air shed, or other media, from which they are taken.

The procedures described in this section represent the optimum method. The failure in any particular instance to follow one or more steps does not necessarily render evidence either inadmissible or unusable. Consequently, there should be no hesitancy to mention any deviation in procedure in any given case.



### Definition of Custody

Chain of custody procedures are followed to establish sample possession from the time it is taken until the results are introduced as evidence into court. A sample is in your "custody" when:

1. It is in your actual physical possession.
2. It is in your view, after being in your physical possession.
3. It was secure beyond a reasonable doubt if not in your view.

### Sample Collection

1. As few people as possible should handle the sample.
2. Preprinted sample tags are filled out in waterproof ink and attached to the sample container at the time the complete sample is collected. The tags contain, as a minimum, the following information: station identification, station location, date-time-type of sample (grab or composite), and initials of the sample collector and any observing witness. It is desirable that witnesses be present.
3. Blank samples, using distilled water with preservatives added, may be prepared at the time of sample collection and later analyzed to establish the lack of container or preservative contamination.
4. Bound Field Data Record logbooks with numbered pages are used to record field measurements and other pertinent information. These notes may be used to refresh the sampler collector's memory in the event he later takes the stand to testify regarding his actions during the evidence-gathering activity. Data entered in the logbooks are recorded with ballpoint pen or waterproof ink. Each page is signed by the sample collector and any available witnesses. Any errata in making entries should be lined out with a single line and then initialed.
5. The sample collector is responsible for the care and custody of the samples until properly dispatched to the receiving laboratory or turned over to an assigned custodian. The sample collector must assure that each container is in his physical possession or in his view at all times, or locked or sealed in such a place and manner that no one can tamper with it.
6. If colored slides, photographs, or other related evidence are obtained to show the impact of the pollutant or substantiate any other conclusions of the investigation, the following documentation is required on the back of each photo or in the Field Data Record Logbook: time, date, location of the photographer when taking the photo, film type, and the signature of the photographer and any witnesses.

### Transfer of Custody and Shipment

1. Samples are accompanied by a chain of custody record which includes the name of the survey, sample collector's signature, number, and description of the samples. When turning over the possession of a part or all of the samples to

a field analysis station or to a laboratory, the transferer and transferee will sign and record the time and date on the sheet.

2. All packages are accompanied by the sample custody record showing identification of the contents. The original accompanies the shipment, and a copy is retained by the survey coordinator. The chain of custody record is signed by the sample collector along with recording the date and time. It is then placed inside the shipping container.
3. Samples are carefully packed for shipment in suitable containers to avoid damage. The shipping containers are locked for shipment, or sealed in such a manner that the container cannot be opened without breaking the seal. This lock or seal is not removed until the shipping container is opened by the laboratory custodian or one of his alternates.
4. If sent by mail, the package is sent via Registered Mail with Return Receipt Requested. If sent by common carrier, all shipping receipts are retained as part of the permanent chain of custody documentation.

#### Laboratory Custody Procedures

1. Couriers picking up samples at the bus depot, post office, etc., sign and retain the shipping documents to acknowledge receipt of the samples.
2. All incoming samples are received only by the laboratory sample custodian or one of his alternates who indicate receipt by signing the chain of custody record accompanying the samples and retaining it as part of the permanent record. Samples are then logged into the laboratory and assigned a laboratory number.
3. The sample custodian or one of his alternates is responsible for the security of the samples in the laboratory. Samples are stored in locked or sealed refrigerators or cabinets with the keys to the locks held by the sample custodian or one of his alternates.
4. Only the sample custodian or his alternates distribute samples to laboratory personnel who are to perform analyses. Laboratory personnel record in their laboratory notebook or analytical worksheet information describing the sample, the procedures performed and the results of the analyses. The notes shall be retained as a permanent record in the laboratory and should note any abnormalities or other significant observations about the samples or analyses.
5. Laboratory personnel are responsible for the care and custody of the sample once it is distributed by the sample custodian.
6. Once the sample analyses are completed, the unused portion of the samples, together with all identifying tags and laboratory records, are returned to the sample custodian. The returned tagged sample is retained in locked or sealed cabinets or refrigerators until it is required for trial.
7. Analytical results are checked and initialed by senior laboratory personnel. The original lab bench sheets are stored in the laboratory files.

8. Samples and tags are discarded only upon the order of the Laboratory Director, after conferring with appropriate personnel in the Enforcement Division or the Assistant Attorney General handling the case to make certain that these items are no longer needed.



APPENDIX E

Site Inspection Health and Safety Report

UNIVERSAL MANUFACTURING COMPANY  
WOODINVILLE, WASHINGTON

SITE SAFETY AND HEALTH PLAN

SEPTEMBER 1985

Prepared by

Suzanne E. Milham  
Washington State Department of Ecology

Site Safety Plan Summary

Site: Universal Manufacturing Company  
144 N.E. 190th Street  
Woodinville, WA 98072

Section 3, Township 26N, Range 5E, WM

Preparer: Suzanne E. Milham

Reviewed by:

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Project Officer, EPA

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Date

\_\_\_\_\_  
Site Inspection Team Leader

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Date

\_\_\_\_\_  
Site Inspection Team Member

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Date



Type of Facility: This facility produces circuit boards and sheet metal products, and does electroplating.

Size of Area: 2 acres.

Land Use in Surrounding Area: This site is in a rural area. Bear Creek is 1/4 mile to the west. Groundwater is at 30 feet and is a source of drinking water for up to 1,000 people within a 3 mile radius. There are 2 parks and 2 schools within 1 mile.

Hazard Type: Direct contact, possible respiratory.

Waste Type: Heavy metals including copper, zinc, lead, cyanide compounds, chlorinated solvents.

Identified Wastes: Cu, Pb, Zn, cyanide, trichloroethane, methyl-ethyl ketone, phosphoric acid.

Factors Promoting Action: This inspection is being carried out under the Multi-Site Cooperative Agreement, Preliminary Assessment/Site Investigation Program. This investigation will attempt to identify the presence, location, and spread of hazardous materials at this site.

Sampling Plan: Soil core samples, groundwater well samples, and possible solid waste or sediment samples if a leachate is present.

Levels of Protection: Level D, Level C, if necessary. Professional judgment and analytical detection equipment will be used in determining the adequacy of these protection levels.

Monitoring Equipment: Draeger tubes for cyanide.

Personnel: Inspection Coordinator: Ned Therien  
WDOE Team Member: Suzanne Milham, Site Safety Coordinator  
EPA Project Officer: Bob Kievit

Personnel Training: The inspection team leader and site safety coordinator have had formal EPA site inspection training as well as emergency first aid and CPR. All unfamiliar on-site activities will be rehearsed prior to the inspection. All team personnel are capable of making professional judgments in hazardous situations. All WDOE site investigation team members are participants in the medical monitoring program.



## Emergency Facilities and Telephone Numbers

### Nearest Telephone: \_\_\_\_\_

Fire, Police, Medic Aid Units: 885-3131

State Patrol: 455-7700

### Hospitals:

Evergreen General Hospital 821-1111

Overlake Hospital 454-4011

Emergency Routes: (See Attachment 1 map to hospitals)

### Emergency Contacts:

Harborview Hospital, Seattle 223-3005

EPA-ERT Emergency 321-6660

EPA Regional Safety Officer 442-0370  
(Ron Blair) 851-8579

## Site Description/History of Activities

This facility produces circuit boards and sheet metal products and does electroplating. Materials used include concentrated acids and caustics, solvents, cyanide and several heavy metals including copper, tin, lead and zinc. Past practices included waste discharges to a septic tank and lagoon which is now filled in with a building over the site. There is a high potential threat to groundwater. Wastes are now removed or discharged to METRO sewers.

## Hazardous Substances Suspected On-Site/Assessment

The hazardous substances suspected on-site are heavy metals, cyanide, and chlorinated solvents. Sampling activities will include collection of groundwater and soil borings. Samples are environmental in nature and are not expected to pose a significant health hazard, however, Draeger tube analysis will be done. If Draeger tube analysis shows cyanide contamination, then the site investigation team will leave the site.

## Equipment Lists

### I. Level D

- Tyvek coveralls or rain suits
- Neoprene steel toe and shank boots
- Chemical resistant gloves - "Solvex"
- Safety goggles - if necessary
- Hard hat
- Latex inner glove liners

### II. Level C

- Air purifying full face respirator (MSHA - NIOSH approved)
- Tyvek (Saranex if raining) coveralls
- Gloves (inner), latex chemical resistant
- Gloves (outer), chemical resistant- "Solvex"
- Boots, chemical resistant steel toe and shank
- Hard Hat
- Duct tape

## Decontamination Procedures

### I. Level D Decontamination

If soiled, Tyvek coveralls, and gloves will be placed in plastic bags and removed from the site for disposal. Boots will be washed with detergent and rinsed before leaving the site. If rain suits instead of Tyvek coveralls are used, soil will be rinsed off while they are still being worn and before the boots are washed.

### II. Level C Decontamination

#### Station 1: Contaminated Equipment Drop

Equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) will be separated and deposited on plastic drop cloths. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination.

#### Station 2: Boot and Glove Wash

Scrub boots and gloves with detergent/water solution.

Equipment: container (20-30 gallons)  
detergent water  
2-3 long-handle, soft-bristle scrub brushes

#### Station 3: Boot and Glove Rinse

Rinse off detergent solution from Station 2 using copious amounts of water. Repeat as necessary.

Equipment: container (30-50 gallons)  
or  
pressure spray unit  
water  
2-3 long-handle, soft-bristle scrub brushes

Station 4: Tape Removal

Remove tape around boots and gloves and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag  
or  
container (20-30 gallons)  
plastic liners

Station 5: Boot Removal

Remove boots, step onto clean dry plastic sheeting.

Station 6: Outer Glove Removal

Remove outer gloves and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag  
or  
container (20-30 gallons)  
plastic liners

Station 7: Coverall Removal

Remove coveralls and deposit in plastic bag or container with plastic liner.

Equipment: plastic bag  
or  
container (20-30 gallons)  
plastic liners

Station 8: Facepiece Respirator Removal

Remove facepiece. Avoid touching face with gloves. Deposit facepiece in individual plastic bags. Decontaminate off of the site.

Equipment: plastic bags

Station 9: Inner Glove Removal

Remove inner gloves and deposit in a plastic bag or a container with plastic liner.

Equipment: plastic bag  
or  
container (20-30 gallons)  
plastic liners